



IEEE CINCINNATI SECTION NEWSLETTER – FEB. 2010

FEBRUARY MEETING **Tour of the Internet Cloud at PEAK10**

Our Thursday, February 25th Section Meeting will be a tour of the PEAK10 managed data center in West Chester. Peak 10 is the leading independent data center operator and managed services provider. It provides managed data centers for virtualization and cloud-based services. Peak 10 helps companies meet the requirements of various regulatory compliance acts such as Sarbanes-Oxley (SOX), HIPAA, PCI and Gramm-Leach-Bliley (GLBA). Come with us and take a tour of the Internet Cloud.

We will meet at 5:30 at the PEAK10 facility in West Chester and the tour will begin at 6:00.

PEAK10 data center
5307 Muhlhauser Road
West Chester 45069

DIRECTIONS:

From I-75N:

Take the Union Centre Exit, Exit 19. Turn left towards Muhlhauser.

Turn Left onto Muhlhauser Rd.

Go approx 1.4 Miles to 5307 Muhlhauser Rd. Along the way you will pass IKEA, you will cross over International Blvd. Use the first entrance on the left hand side of the street.

From 275E or W:

Take OH-747 North Exit, Exit 42B.

Travel approx 1.6 Miles on 747 (Princeton-Glendale Rd.) and turn right onto Muhlhauser Rd. (Back Porch Saloon is on the corner).

Travel approx .8 Mile to 5307 Muhlhauser Rd. PEAK10 will be on the right hand side of the street.

[Google Map to the PEAK10 Data Center](#)

RESERVATIONS: Please email Fred Nadeau for reservations at Reservations@ieeeCincinnati.org (preferred) or call the Section Voice Mail at 513-629-9380 by **Noon, Tuesday, February 23, 2010** if you plan to attend. Please leave your Name, IEEE Member Number, and a daytime telephone number.

PE CREDITS: Depending on the subject matter, attendance at IEEE Cincinnati Section Meetings now qualifies the attendee for Professional Development Hours towards renewal of Professional Engineers Licenses. Required documentation will be available following the meeting! The Section Meetings also provide a great opportunity to network with fellow engineers in the area.

MEMBERSHIP NEWS

NEW MEMBERS

The following individuals are IEEE members who are new to our Section:

Niraj R. Bhatt	Gayatri Kallepalle
Paul Caylor	Hoang Lai
Gavin Dao	Mark A. Meister
Dale Dickerhoof	Richard R. Recetti
Keith J. Flourney	Robert Weldon Riemen
Tom Fritsch	Brian Daniel Smith
Michael D. Harvey	Mary Katherine Soltys
Suzanne G. Johnston	Rohan R. Soman

We wish to welcome these new members to the Cincinnati Section!!!

Scanning the Past: A History of Electrical Engineering from the Past

Submitted by Bob Morrison, Editor

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William Le Roy Emmet and Turboelectric Engineering

Sixty-five years ago, William Le Roy Emmet's *The Autobiography of an Engineer* was published. The formal portrait of Emmet shown in Fig. 1 was included in the book. The book provided a fascinating personal account of his career of almost half a century devoted to electrical power engineering. In the preface, Emmet characterized engineering as a "thrilling profession to those who are suited to it, full of dangers, hopes, worries, and gratifications." Later in the book, he attributed much of his success to "a definiteness of purpose backed by a dogged perseverance." He added that "the important part of engineering is the detail and the good engineers are those who keep their eye close to it." He mentioned that he had always had a keen interest in other areas than engineering including "literature, history, science, philosophy, music, and art in various forms."



Fig. 1. Emmet at age 70, as painted by Ellen Emmet Rand in 1929. (Courtesy of *The Autobiography of an Engineer*, 1931.)

Emmet was born in New Rochelle, NY, in 1859. He graduated from the U.S. Naval Academy in 1881 [See Fig.2(a)] and served a tour on the U.S.S. *Essex* before leaving the Navy in 1883. His first experience in the field of electric power was gained with the United States illuminating Company which he left to join the Sprague Electric Railway and Motor Company in 1888. At Sprague, Emmet worked on the installation of electric street railway systems in several cities, including Cleveland, St. Louis, Wichita, and Harrisburg, PA. Subsequently, he worked briefly for the Westinghouse Electric and Manufacturing Company and for the Buffalo Railway Company before joining the Edison General Electric Company as district engineer in the Chicago district in 1891. When the General Electric Company (GE) was formed through a merger of Edison General Electric and Thomson-Houston, Emmet became a GE employee and was assigned to the Lighting Department in Schenectady, NY, in 1894.

Emmet made significant contributions to ac power systems including the design of large rotary converters which were used widely to convert transmitted ac power to direct current needed for the manufacture of aluminum, electric railways, and other applications. He was a leader in constructing the second largest power generating plant at Niagara Falls, NY, which used GE apparatus. His career was interrupted by the Spanish-American War when he served as a navigational officer on the collier *Justin* [See Fig. 2(b)]. When he returned to GE, he was assigned to help develop the steam turbine which began to supplant reciprocating steam engines in the power generating field in the first decade of the 20th Century. Emmet directed the construction and installation of a 5000 kW turboalternator at the Fisk Street power plant of the Chicago Edison Company in 1903.

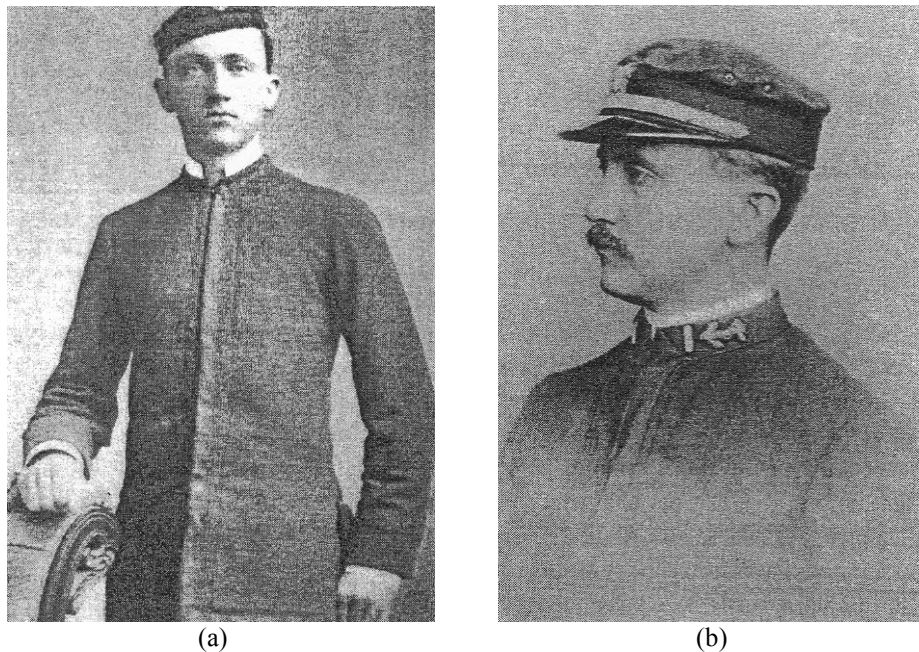


Fig. 2. (a) Emmet as a cadet in the U. S. Naval Academy in 1880. (b) Emmet was back in uniform in 1898 as a Navigational Officer on the collier *Justin* during the Spanish-American War (Photos courtesy of *The Autobiography of an Engineer*, 1931.)

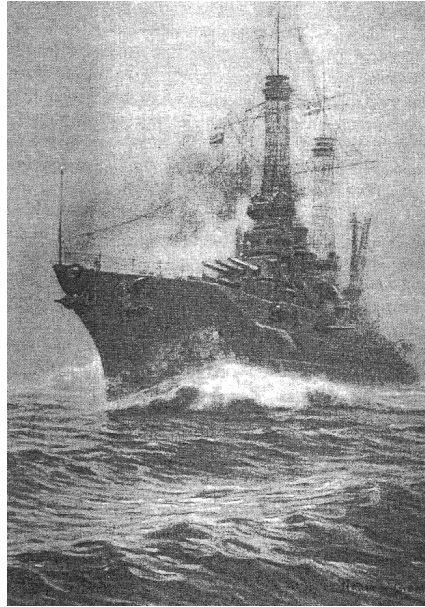


Fig. 3. The U.S.S. *New Mexico* was the first battleship to have Emmet's turboelectric propulsion system installed by GE under a 1915 Navy contract. Illustration courtesy of GE, 1920.

Emmet became a leading advocate of the electric propulsion of ships and his efforts led to a GE contract to equip the Navy collier *Jupiter* with turboelectric drive. The *Jupiter* proved quite successful during World War I and later was converted into an aircraft carrier and renamed the *Langley*. In 1915, GE received a contract to install the Emmet propulsion system on a new battleship, the *New Mexico*, as shown in Fig. 3 (known initially as the *California*). First tested in sea trials in 1918, the ship's propulsion system could deliver up to 32,000 hp and achieve a speed of 21 kn. Subsequently, GE installed an even more powerful drive system in high speed battle cruisers known as the *Saratoga* and the *Lexington*. These ships, later converted to aircraft carriers, were designed with 180,000 hp turboalternator propulsion and a speed of 35 kn.

During World War I, Emmet served as a member of the Naval Consulting Board formed to provide expert advice on military innovations. He received the prestigious Edison Medal of the American Institute of Electrical Engineers in 1919 in recognition of his numerous contributions to electric power engineering including ship propulsion. He received the Elliott Cresson Medal of the Franklin Institute in 1920 and also was elected to the National Academy of Sciences.

Emmet devoted a great deal of time and energy to the development and promotion of mercury vapor turbines as a more efficient power generation system than steam turbines. A few mercury turbines were installed as a result of his efforts but the difficulties and risks in using the new technology led to termination of the development after his retirement. He died in 1941 at age 82.

James E. Brittain
School of History , Technology and Society
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IEEE NEWS

Oncor Senior Vice President to Discuss His Company's Smart Grid Initiative at IEEE Green Technology Conference in Grapevine, Texas

WASHINGTON (25 January 2010) -- Oncor Senior Vice President Jim Greer will be a keynote speaker at the second annual IEEE Green Technology Conference, 15-16 April, at the Gaylord Texan Resort and Convention Center in Grapevine, Texas. Greer, who oversees asset management and engineering for Oncor, will be a luncheon speaker on 16 April.

As the architect of Oncor's Smart Grid technology initiative, Greer is a good match for the event's focus on new technologies to promote conservation, renewable energy and automation. Oncor, a national leader in installing advanced meter technology, will install 3.4 million smart meters and the information technology systems supporting real-time reporting of energy use by 2012. Greer is overseeing this transformation of Oncor's transmission and distribution business through technology.

"IEEE members are the innovators who will come up with the great ideas and the new approaches that will help society transition to a more sustainable and efficient approach to energy use," Greer said. "I'm looking forward to discussing Oncor's own vision for the future, the Smart Texas initiative, which is creating an interactive, two-way electric grid that speaks to both Oncor and the consumer, providing real-time information about energy use."

Greer, an active member of IEEE, is responsible for developing strategies, policies and plans that improve the value and performance of Oncor's electric grid. He has worked for Oncor and its predecessor companies since 1984 and holds a bachelor's degree from the University of Texas at Arlington and a master's of business administration from Texas Christian University. He is a licensed professional engineer and serves on the Texas State Board of Professional Engineers.

Oncor, based in Dallas, is host utility for the conference (<http://www.ieeegreentech.org/>).

IEEE members and engineering students from throughout the United States are expected to attend the conference to explore emerging technologies in renewable energy, alternative fuel, alternative vehicle power sources and technologies to promote energy conservation in the home and business. The event will also look at the social, economic and political impacts of renewable energy sources, as well as the social and economic impact of new technologies.

"There has never been a better time for IEEE, together with the university research community, architectural, engineering and other technical professionals to weigh in on environmentally friendly alternatives and improvements to our traditional energy economy," said Ed Safford, conference technical program chair. "Wind farms are driving grid infrastructure. Emerging solar technologies are rapidly approaching cost competitiveness. Sustainable designs are providing effective ways to achieve energy efficiency, and green building certifications are becoming business discriminators."

No Significant Improvement in Fourth Quarter Engineering and Computer Jobs Data

WASHINGTON (26 January 2010) -- After two quarters of small job increases for U.S. electrical and electronics engineers (EEs), their levels of employment retreated 3 percent in the fourth quarter of 2009, according to data released by the Department of Labor's Bureau of Labor Statistics. The EE unemployment rate fell from 7.3 percent in the third quarter to 5.2 percent in the fourth.

"Viewed together, these results are discouraging," IEEE-USA Past President Gordon Day said. "The recent growth in EE employment has stalled and the improvement in the unemployment rate is entirely on the

unemployed side. It appears that EEs who lost their jobs in early 2009 are taking jobs in other fields or giving up on their job searches."

Some engineering fields fared better, some worse. Averaged across all engineers, quarter to quarter employment was essentially flat. The same was true for computer disciplines. In both cases, the unemployment rate decreased, from 5.9 percent to 5.3 percent for engineers and from 6 percent to 4.6 percent for computer professionals.

"Engineers create jobs, so improvements in engineering employment data is a leading indicator of overall job recovery," Day said. "These data do not reflect the job recovery we were hoping for."

Unemployed and at-risk IEEE members can find help at <http://www.ieeeusa.org/careers/help/>. Career enhancement resources are available at <http://www.ieeeusa.org/careers/>.

IEEE-USA E-Book Series -- "Doing Innovation: Creating Economic Value" -- Is Complete
WASHINGTON (29 January 2010) -- IEEE-USA's e-book series, "Doing Innovation: Creating Economic Value" has been completed with the work, "What It Takes To Be an Innovator."

Written by Gus Gaynor, a retired 3M director of engineering, it looks at "the critical element in innovation -- the innovator." Gaynor provides a picture of what an innovator could and should bring to an organization, including characteristics and attitudes. He also discusses some famous innovators.

The other e-book titles in the series are:

Book 1: "Perspectives on Innovation," which gives an understanding of what innovation is and how it takes place.

Book 2: "Developing a Workable Innovation Process" emphasizes designing the innovation process from a systems perspective.

Book 3: "Fostering an Innovation Culture" provides the fundamentals for developing a culture that supports innovation.

Collect all four books in the "Doing Innovation" series and be well-versed in the ways of the innovator.

You can purchase your copy of "Doing Innovation: Creating Economic Value -- Book 4: What it Takes To Be an Innovator" at www.ieeeusa.org/communications/ebooks for the IEEE member price: \$9.95. The nonmember price is \$19.95.

IEEE members can purchase other IEEE-USA E-Books at deeply discounted prices -- and download some for free.

To purchase IEEE members-only products and receive the member discount on eligible products, members must log in with their IEEE Web account.

CALL FOR AUTHORS

If you've got an idea for an e-book that will educate other IEEE members and high-tech professionals on a particular career topic, e-mail your idea to IEEE-USA Publishing Manager Georgia C. Stelluto at g.stelluto@ieee.org.

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